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Salticidae from the Himalayas. The genus *Pancorius* Simon, 1902 (Arachnida: Araneae)[1]

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Abstract. Three new species of the jumping spider genus *Pancorius* Simon, 1902: *P. armatus*, *P. cadus*, *P. urnus* are described from the Nepal Himalayas. *P. magnus* Żabka, 1985 is reported for the first time from the Himalayas. Diagnoses, descriptions and drawings of diagnostic characters for those species are given. Check-list and map of horizontal distribution of species of *Pancorius* from the Himalayas are given.

Keywords: arachnology, taxonomy,. *Pancorius*, new species, jumping spiders, Salticidae, Nepal, Himalaya.

INTRODUCTION

Tradition of investigation of the Himalayas has over 150 years. The precursor of this research was B. H. Hodgson, the British resident. He lives in Nepal from 1822 to 1843. In this period Hodgson explored local fauna. The escalation in the knowledge of Nepal fauna was started after ending of political isolation of Nepal. From 1949 was organized several international research expeditions. Significant participation in these working had researchers from different countries, e.g. from Germany, Great Britain, France, USA (Martens 1979). High number of new species were described from the area, including jumping spiders. One of the greater collection of jumping spiders from Himalayas was gathered by Prof. Jochen Martens of the Naturmuseum und Forschungsinstitut Senckenberg. By his courtesy I had an occasion to study the material and this paper is continuation of my studies on Himalayan Salticidae based on J. Martens collection. This paper deals the genus *Pancorius* Simon, 1902.

[1]Results of the Himalaya Expeditions of J. Martens, No. 274. - For No. 273, see: J.Avian Biology 42, 2011.

MATERIAL AND METHODS

Material for this study was provided by Naturmuseum und Forschungsinstitut Senckenberg, Frankfurt a. M. (Prof. J. Martens, Mainz) (SMF).

The drawings were made using a grid system. Descriptions of colours pertain to wet specimens. Dissected epigynes were under maceration in 10% KOH for 24 hrs. The format of leg spination follows Platnick & Shadab (1975). The photographs were made by means of Canon PowerShot A620 attached to a stereomicroscope Nikon SMZ800. Further adjustments of the images were made with Helicon Focus. All measurements are in mm.

Abbreviations used: AEW - anterior eye width, AL - abdomen length, CL - cephalothorax length, CW - cephalothorax width, EFL - eye field length, m a.s.l. - meters above see level, PEW - posterior eye width, pm - prolateral metatarsal spines, pt - prolateral tibial spines, rm - retrolateral metatarsal spines, rt - retrolateral tibial.

TAXONOMIC SURVEY

Genus *Pancorius* Simon 1902

Pancorius Simon 1902: 410; Żabka 1985: 422; 1990: 162.

The genus *Pancorius* was established by Simon 1902, for *P. dentichelis* as a type species. At present the genus includes 27 nominal species (Platnick 2009, Prószyński 2009), some of them should be revised. *Pancorius* is an oriental genus, which is well-known from the Himalayas (Żabka 1990). It is related to genera *Plexippus* and *Pseudamycus*.

The genus *Pancorius* is represented in the Himalayas by the following species (precise localities of species – see map 1):

P. armatus n. sp.: Nepal (this paper),
P. cadus n. sp.: Nepal (this paper),
P. changricus Żabka 1990: Bhutan (Żabka 1990),
P. darjeelingianus Prószyński 1992: India (West Bengal) (Prószyński 1992),
P. kaskiae Żabka 1990: Nepal (Żabka 1990),
P. magniformis Żabka 1990: Bhutan (Żabka 1990),
P. magnus Żabka 1985: India (West Bengal) (Żabka 1985, Prószyński 1992), Vietnam (Żabka 1985), Nepal (this paper),
P. minutus Żabka 1985: China (Żabka 1985, Song & Chai 1991, Song et al. 1999), Nepal (Żabka 1990),
P. submontanus Prószyński 1992: India (West Bengal) (Prószyński 1992),
P. tagorei Prószyński 1992: India (West Bengal) (Prószyński 1992),
P. urnus n. sp.: Nepal (this paper),
P. wangdicus Żabka 1990: Bhutan (Żabka 1990).

***Pancorius armatus* n. sp.**

(Figs 1-4, 13-14)

Etymology

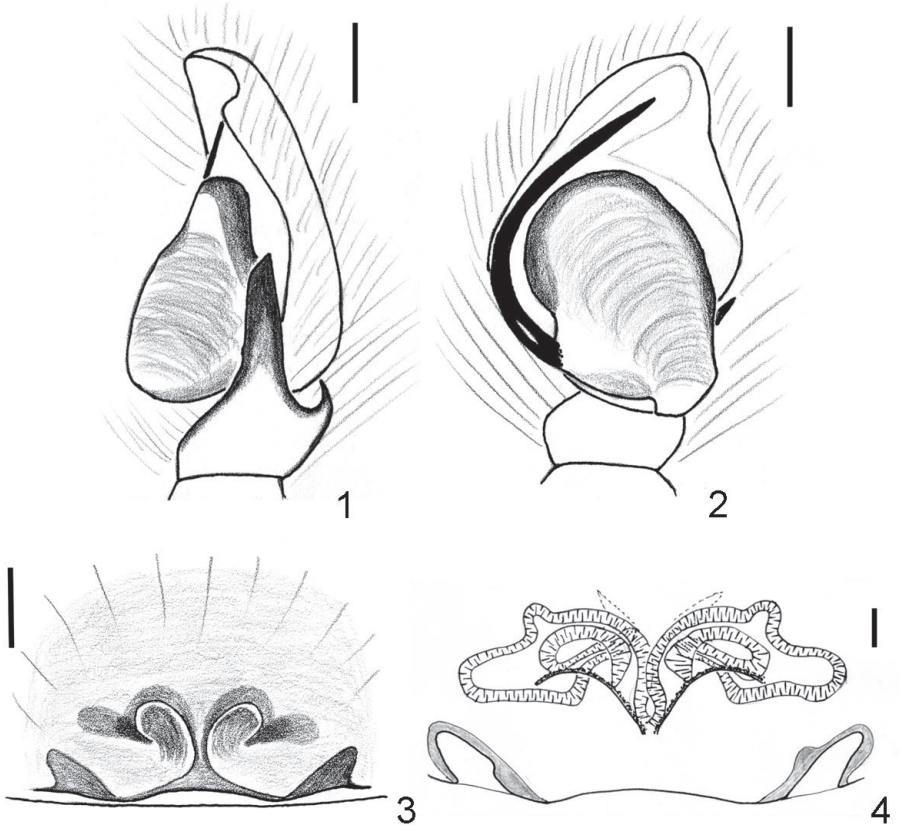
From appearance of embolus and tibial apophysis, make impressions that specimen is strongly armed (in Latin: *armatus* = armed).

Diagnosis

From related *P. kaskie* could be distinguished by long, sword-shaped, placed lower-lateral embolus and by long, wide with sharp tip tibial apophysis. Epigynum with two lateral pocket and small rectangular spermathecae, its excite parts elongated into a narrow canal.

Description

Male. Surroundings of median and posterior eyes black. Around frontal eyes long sparse brown hairs. Around all one short white hairs. Along sides and central of thoracic



1-4. *Pancorius armatus* n. sp.: 1 – left palpal organ, lateral view; 2 – same, ventral view; 3 – epigynum, ventral view; 4 – internal genitalia, ventral view. Scale 0.2 mm

part light brown belts. The rest of cephalothorax brown. Abdomen grey with longitudinal, wide, fawn-colored herring-bone pattern and lateral fawn-colored spots forming longitudinal belts. Lower margin of abdomen white. Spinnerets: lateral white, median grey. Clypeus brown, covered with white delicate, short hairs. Chelicerae brown with single retrolateral tooth. Maxillae and labium light brown, its tips white with white hairs. Sternum shiny yellow. Venter fawn-colored with dark grey spots. Pedipalps light brown. Bulbus oval with ventral outgrowth and translucent seminal reservoir. Embolus elongated, sword-shaped, placed lower-lateral. Tibial apophysis long, wide with sharp tip. Legs lighter: from I – light brown to IV – fawn-colored. Surroundings of joints of legs IV dirty brown. All legs covered with brown hairs and spines. Scopula absent. Spines formula: tI: p1-1-1 r1-1-1; mI: p1-1 r1-1; tII: p1-1-1 r1-1-1; mII: p1-1 r1-1.

Measurements: CL 1.77, CW 1.38, EFL 0.89, AEW 1.14, PEW 1.08, AL 2.07.

Female. Eye field dark brown covered with delicate, short white hairs. Around frontal eyes long, dark hairs. Thoracic part brown with longitudinal lighter belt and dark dots and small spots. Lower margin light brown covered with white hairs. Abdomen grey with fawn dots and spots forming longitudinal belts; all covered with short, sparse dark brown hairs, which are longer and denser on frontal margin. Dorsally longitudinal, narrow belt of dense short white hairs. Lower margin of abdomen white. Spinnerets: lateral grey, median white. Clypeus brown covered with dense white hairs. Chelicerae brown with single retrolateral tooth and a few dark brown hairs. Maxillae and labium brawn with dirty brown stains, its tips white with white nad a few dark brown hairs. Sternum shiny, dirty brown with brown dots. Venter grey. Pedipalps fawn covered with dense white hairs. Epigynum with two lateral pocket. Copulatory openings oval. Insemination ducts narrow. Spermathecae small, rectangular, its distal parts elongated into narrow canal. Accessory glands small, oval. Legs light brown; femora I – dirty brown, remains – yellow. All legs covered with delicate brown hairs and spines. Scopula absent. Spines formula: tI: p1-1-1 r0-1-1; mi: p1-1 r1-1; tII: p1-0-0 r0-1-1; mII: p1-1 1-1. Measurements: CL 2.12, CW 1.52, EFL 0.80, AEW 1.24, PEW 1.20, AL 3.16.

Habitats

Nepal – forest of evergreen oaks and Lauraceae, 2000-2400 m a.s.l.; mixed forest, 2700 m a.s.l.

Material

Holotype (1♂), allotype (1♀), Nepal: (SMF) Parbat Distr., betw. Deorali and Chitre, 2700 m, 1.-2.05.1995, Martens, Iglesias, Schawaller. Paratype: 1♂ (SMF) Myagdi Distr., Myagdi Khola S Dobang, 2000- 2400 m, 26.05.1995, Martens, Iglesias, Schawaller.

Pancorius cadus n. sp.

(Figs 5-8, 15-17)

Etymology

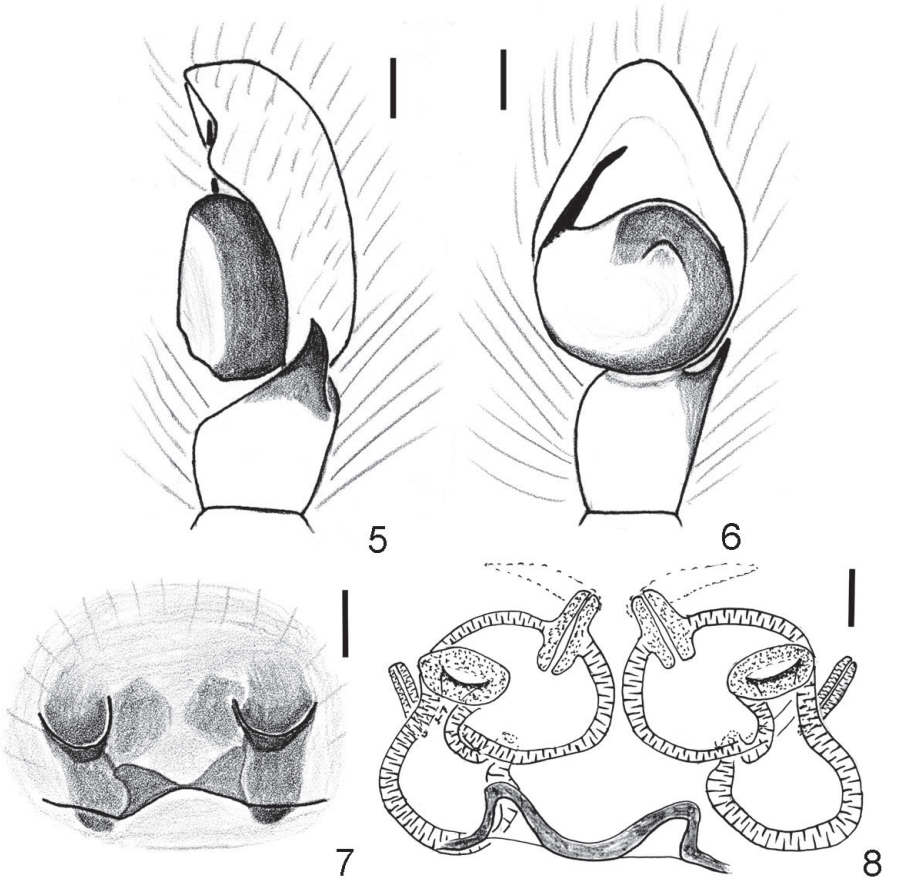
From appearance of insemination ducts: in Latin *cadus* – ewer.

Diagnosis

From related *P. changricus* could be distinguished by narrow, coin-shaped embolus placed dorso-laterally and slightly curved tibial apophysis. Epigynum with two pocket placed centrally and insemination ducts ewer-shaped.

Description

Male. Surrounding of eyes: AME – dark brown; remains – black; with long brown hairs. Eye field brown. Thoracic part dark brown. Along lower margin belt of short, white hairs. Abdomen grey with fawn dots and stains forming narrow longitudinal strips. In frontal part of abdomen large, white longitudinal belt. Lower margin of abdomen with mosaic of white and grey very narrow longitudinal belts. On the whole surface sparse brown hairs and bristles Spinnerets grey-brown. Clypeus dirty light brown with sparse, long, white hairs. Chelicerae dirty brown with single retrolateral tooth and sparse long



5-8. *Pancorius cadus* n. sp.: 5 – left palpal organ, lateral view; 6 – same, ventral view; 7 – epigynum, ventral view; 8 – internal genitalia, ventral view. Scale 0.2 mm

brown hairs. Maxillae and labium light brown, its tip white covered with dense white hairs and a few brown ones. Sternum shiny yellow with sparse brown hairs. Venter grey with fawn stains and dots. Pedipalps light yellow. Bulbus oval with translucent seminal reservoir. Embolus narrow, placed dorso-laterally. Tibial apophysis coin shaped, slightly curved. Legs yellow, only femora I darker; covered with sparse, dark brown hairs and spines. Scopula absent. Spines formula: tI: p1-1-1 r1-1-1; mI: p1-1 r1-1; tII: p1-1-1 r1-1-1; mII: p1-1 r1-1.

Measurements: CL 2.12, CW 1.80, EFL 1.04, AEW 1.60, PEW 1.52, AL 2.24.

Female. Surroundings of eyes black with sparse long dark and short white hairs. Eye field dark brown. The rest of cephalothorax chestnut-brown. Abdomen ivory-colored; on the surface 3 pairs of longitudinal, large rust stains. Lower margin of abdomen with grey and ivory narrow belts and dots. Whole covered with sparse dark hairs. Spinnerets grey-brown. Clypeus chestnut-brown covered with white hairs. Chelicerae chestnut-brown with single retrolateral tooth and dark hairs located close to teeth. Maxillae and labium orange, its tips white, covered with dense white hairs. Sternum shiny yellow. Venter grey with fawn stains. Pedipalps orange, covered with dark hairs and bristles. Epigynum with two central pockets. Copulatory openings semicircle. Insemination ducts forming ewer. Spermathecae oval. Accessory glands elongated. Legs: I – chestnut-brown, its femora dirty light brown; II – orange, its femora – lighter; III i IV - light brown, its femora pale yellow; covered with dark hairs and bristles. Scopula absent. Spines formula: tI: p1-1-1 r1-1-1; mi: p1-1 r1-1; tII: p1-1-1 r1-1-1; mII: p1-1 r1-1.

Measurements: CL 2.90, CW 2.35, EFL 1.35, AEW 2.05, PEW 1.95, AL 3.70.

Material

Holotype (1♂), allotype (1♀), Nepal: (SMF) Taplejung Distr., Yamputhin, cultural land, open forest, 1650-1800 m, 26.04-1.05.1988, Martens, Schawaller. Paratype 1♀, same data.

Pancorius magnus Żabka, 1985

(Figs 9, 20)

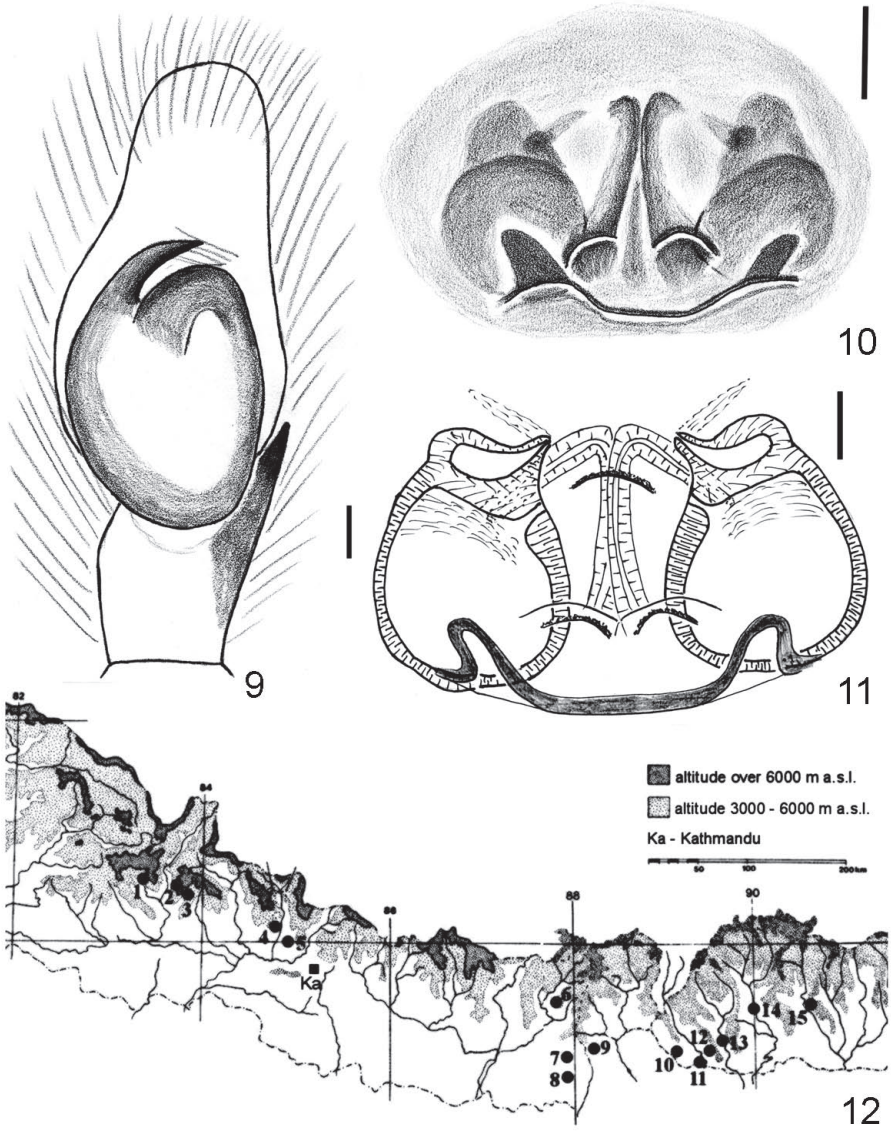
P. magnus Żabka, 1985: 422; Prószyński, 1992: 191.

Diagnosis

From related *P. magniformis* could be distinguished by absence on embolus a small membranous outgrowth.

Description

Male. Eye field and surrounding of AME chestnut-brown. Surrounding of the rest of eyes black with a few delicate white hairs. Dorsal part of thoracic part of cephalothorax orange, lateral parts of its almost black. Abdomen beige with a mosaic of grey dots and spots forming laterally longitudinal narrow belts whole covered with sparse long light hairs. Spinnerets lateral pair - dirty dark brown, the median ones – grey. Clypeus dark



9. Left palpal organ of *Pancorius magnus* Żabka, 1985, lateral view. 10-11. *P. urnus* n. sp., female: 10. epigynum, ventral view; 11. internal genitalia, ventral view. Scale 0.2 mm. 12. Collecting localities of *Pancorius* species (after Żabka 1989, modified): NEPAL: 1 - Myagdi Distr., Myagdi Khola, S Dobang, 2000-2400 m; 2 - Kaskie Distr., betw. Tolka a. Dhumpus, 1850-1950 m; 3 - Parbat Distr., betw. Deorali and Chitre, 2700 m; 4 - Gorkha Distr., Arughat Bazar 600 m; 5 - Dhading Distr., Ankhu Khola-Tal, Ankhu Sangu, 650 m; 6 - Taplejung Distr., Yamputhin, 1650-1800 m; 7 - Ilam Distr., northern Ilam, 1250-1620 m. 8 - Ilam Distr., betw. Nodia Khola Valley to Soktim, 240-500 m; INDIA (West Bengal): 9 - Darjeeling Distr., Lopchu, 1500 m; Kurseong, 1000 m; BHUTAN: 10 - Samchi, 400 m; 11 - Phuntsholing, 200-400 m; 12 - Kamjee, 1400 m; 13 - 87 km from Phuntsholing, 1700 m; 14 - Wangdi Phodrang, 1700-2000 m; 15 - Changra, 1900 m. According to species: *P. armatus*: 1, 3; *P. cadus*: 6; *P. changricus*: 15; *P. darjeelingianus*: 9; *P. kaskiae*: 2; *P. magniformis*: 10, 11, 12, 13; *P. magnus*: 8, 9; *P. minutus*: 4, 5; *P. submontanus*: 9; *P. tagorei*: 9; *P. urnus*: 7; *P. wangdicus*: 14

brown with a fringe of long white hairs. Chelicerae thick, robust dark brown covered with dense short white hairs with single retrolateral tooth. Maxillae and labium brown its tips white covered with light hairs. Sternum shiny yellow. Venter grey. Pedipalps light brown with sparse long brown hairs, only on the top of cymbium hairs short, dense and white. Bulbus oval with translucent seminal reservoir. Embolus short, flattened, dagger-like. Tibial apophysis short, cone-shaped. Legs long: I and II - robust, covered with brown hairs and strong bristles, its femora, patellae and tibiae dark brown, metatarsi – brown, tarsi – light brown; III and IV – more delicate, with brown hairs and bristles, its femora and patellae brown, remaining segments light brown. Scopula very dense on the patellae, tibiae and metatarsi of two first pair's legs.

Distribution

Species for the first time reported from the Himalayas. Besides occur in the India (West Bengal) (Żabka 1985, Prószyński 1992) and Vietnam (Żabka 1985).

Habitats

India – on the path in the jungle (Żabka 1985, Prószyński 1992), Vietnam - calcareous rocks in the tropical rain forest; path in the forest, near creek; roadside wall with dense vegetation; stony jungle slope (Żabka 1985), Nepal - damp tropical forest (with *Shorea*), 240-500 m a.s.l.

Material

Nepal: 1♂ (SMF) Ilam Distr., betw. Nodia Khola Valley to Soktim, 240-500 m, *Shorea* forest, dry, 7.04.1988, coll. Martens, Schawaller.

***Pancorius urnus* n. sp.**

(Figs 10-11, 18-19)

Etymology

From appearance of spermathecae: in Latin: *urna* – urn, water vessel.

Diagnosis

From related *P. changricus* could be distinguished by epigynum with three small membranous pockets: two lateral and one central, and by two large, chambered oval spermathecae.

Description

Male unknown.

Female. Eyes field orange. Surrounding of eyes black with sparse white hairs. The rest of cephalothorax light brown with longitudinal uneven grey-brown belts. Abdomen ivory with light grey, sparse, small stains; all covered with delicate, sparse brown hairs, longer frontally. Spinnerets grey-brown, its tips lighter. Clypeus light brown with a few delicate white hairs. Chelicerae light brown with single retrolateral tooth. Maxillae and labium orange, its tips white covered with light hairs. Sternum shiny

yellow. Venter ivory. Pedipalps light brown covered with light hairs. Epigynum with two small, placed laterally pockets. Centrally placed additional, membranous pocket. Copulatory openings narrow. Insemination ducts narrow, membranous. Spermathecae large, two chambered, oval. Accessory glands inside spermathecas wall. Legs light brown, surrounding of joins and dorsal surfaces of femora dirty brown, all covered with brown hairs and bristles. Scopula absent. Spines formula: tI: p1-1-1 r1-1-1; mI: p1-1 r1-1; tII: p1-1-1 r1-1-1; mII: p1-1 r1-1.

Measurements: CL 2.36, CW 1.84, EFL 1.00, AEW 1.80, PEW 1.72, AL 3.16.

MATERIAL

Holotype, female, Nepal: (SMF) Ilam Distr., northern Ilam, 1250-1620 m, cultural land, 25.03.1980, coll. Martens, Ausobsky.

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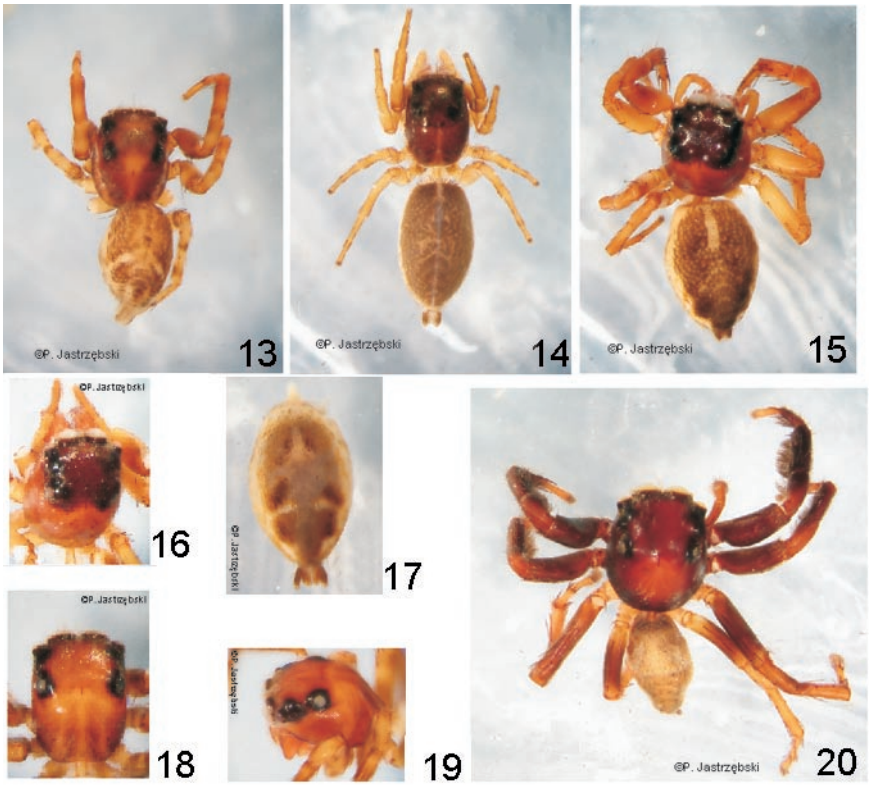
Prof. J. MARTENS (Mainz), provided specimens for study.



13-20. Dorsal aspect of *Pancorius* Simon, 1902: *Pancorius armatus* sp. n.: 13 – male; 14 – female; *Pancorius cadus* sp. n.: 15 – male; 16 – female cephalothorax; 17 – female abdomen; *Pancorius urnus* sp. n.: 18 – dorsal view of cephalothorax; 19 – same, dorso-lateral view; 20 – *Pancorius magnus* ŻABKA, 1985

REFERENCES

Platnick, N. I., 2009. The world spider catalog, version 10.0. American Museum of Natural History, online at http://research.amnh.org/entomology/spiders/catalog/index.html

Platnick, N.I. & Shadab, M.U., 1975. A revision of the spider genus *Gnaphosa* (Araneae: Gnaphosidae) in America. Bul. Am. Mus. Nat. Hist., **155**: 1-66.

Prószyński, J., 1992. Salticidae (Araneae) of India in the collection of the Hungarian National Natural History Museum in Budapest. Ann. zool., **44**: 165-227.

—, 2009. Monograph of the Salticidae (Araneae) of the World. http://www.miiz.waw.pl/salticid/main.htm. (version June 10th, 2009).

Song, D.X., Chai, J.Y., 1991. New species and new records of the family Salticidae from Hainan, China (Arachnida: Araneae), pp. 13-30. In Y.W. Qian et all. (eds), Animal Science Research, China Forestry Publishing House, Beijing.

Song, D., Zhu, M., Chen, J., 1999. The Spiders of China. Hebei Science and Technology Publishing House, Shijiazhuang. 640 pp.

Żabka, M., 1985. Systematic and zoogeographic study on the family Salticidae (Araneae) from Viet-Nam. Ann. zool., **11**: 1-485.

—, 1990. Salticidae from the Nepal and Bhutan Himalayas. Genera *Pancorius* Simon 1902, *Plexippus* C. L. Koch 1846, and *Pseudamycus* Simon 1885 (Arachnida: Araneae). Senck. biol,, **70**: 161-178.